

## **KATRIN: current status of project and result on the neutrino mass.**

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The Karlsruhe TRitium Neutrino experiment (KATRIN) is designed to improve the existed direct limit on the effective electron antineutrino mass by an order of magnitude, with a projected sensitivity of 0.2 eV/c<sup>2</sup> at the 90% confidence level. To achieve this KATRIN is using a windowless gaseous molecular tritium source containing up to 100 GBq activity and electrostatic spectrometer with adiabatic magnetic collimation with resolution at 1 eV level.

At May,2021 five data taking runs (with duration about two month each) are completed. First two runs are analyzed and provide new neutrino mass limit  $m_\nu < 0.8 \text{ eV}/c^2$ . First data run is analyzed for the presence of light sterile neutrino signal. With current level of sensitivity KATRIN data can't neither confirm nor exclude Neutrino-4 experiment claim of observed sterile neutrino signal. Currently, the main efforts of the KATRIN team are aimed at reducing the spectrometer background and achieving stable data collection parameters.. In the historical introduction are considered main milestones of neutrino mass search, particularly contribution of Leningrad - St.Petersburg physicists.

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